

4-3-09 IB

Multiple Choice

Identify the choice that best completes the statement or answers the question.

Solve the equation.

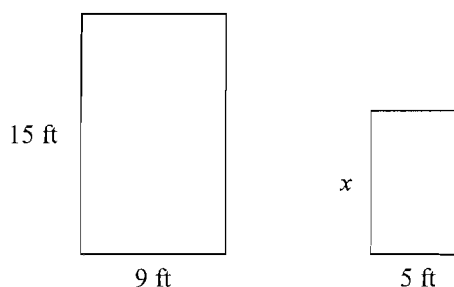
- _____ 1. $18 = -d + 10$
 a. 8 b. -13 c. 6 d. -8

Solve the proportion.

- _____ 2. $\frac{x-2}{14} = \frac{8}{14}$
 a. $\frac{53}{2}$ b. 8 c. 10 d. $\frac{57}{7}$

The pair of figures is similar. Find x . Round to the nearest tenth if necessary.

_____ 3.



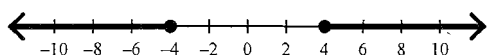
Drawing not to scale

- a. 1.8 ft b. 0.3 ft c. 3 ft d. 8.3 ft

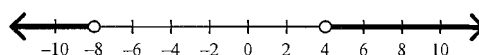
Solve the inequality. Then graph your solution.

- _____ 4. $|d + 2| \geq 6$

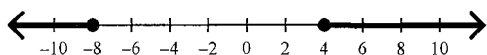
a. $d \leq -4$ or $d \geq 4$



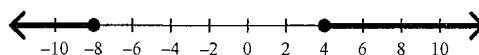
c. $d \leq -8$ or $d \geq 4$



b. $d \geq -8$ or $d \geq 4$



d. $d \leq -8$ or $d \geq 4$



Find the slope of the line that passes through the pair of points.

_____ 5. $(1, 7), (10, 1)$

a. $\frac{3}{2}$

b. $-\frac{2}{3}$

c. $-\frac{3}{2}$

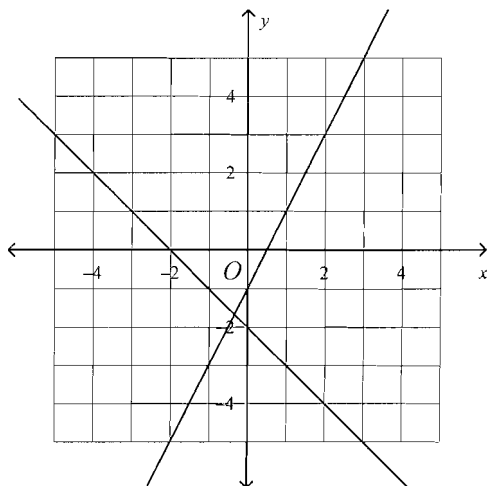
d. $\frac{2}{3}$

_____ 6. Which graph represents the following system of equations?

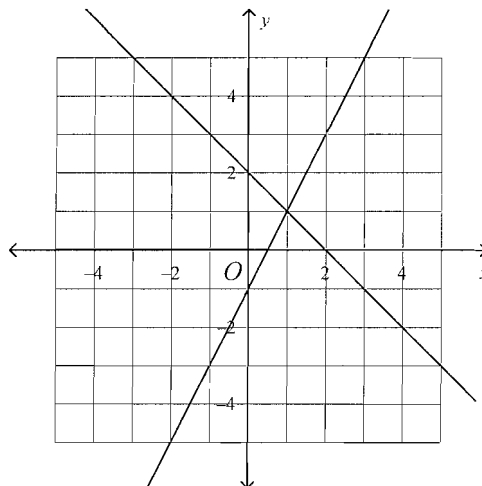
$$y = -x + 2$$

$$y = 2x - 1$$

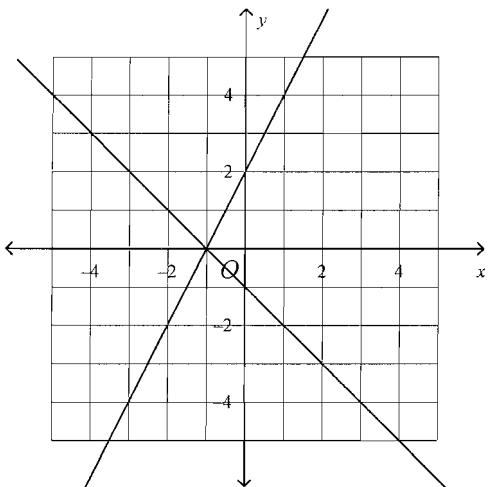
a.



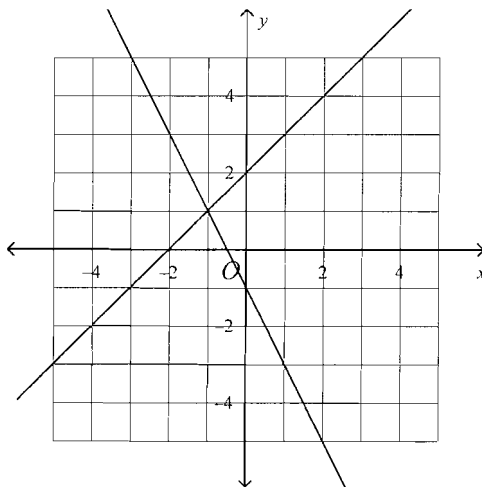
c.



b.



d.



Solve the system of equations using substitution.

_____ 7. $3x + 2y = 7$

$$y = -3x + 11$$

a. $(6, -3)$

b. $(6, -7)$

c. $\left(-4, \frac{19}{2}\right)$

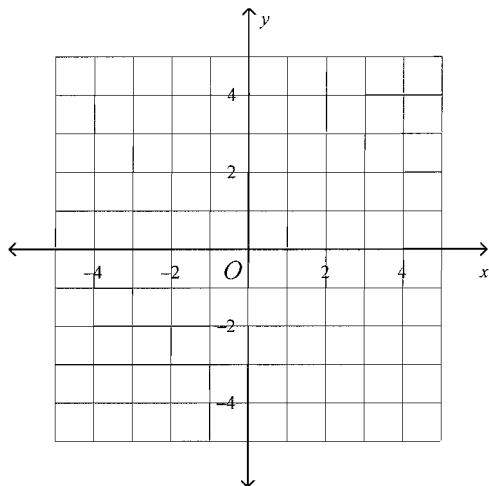
d. $(5, -4)$

Solve the system using elimination.

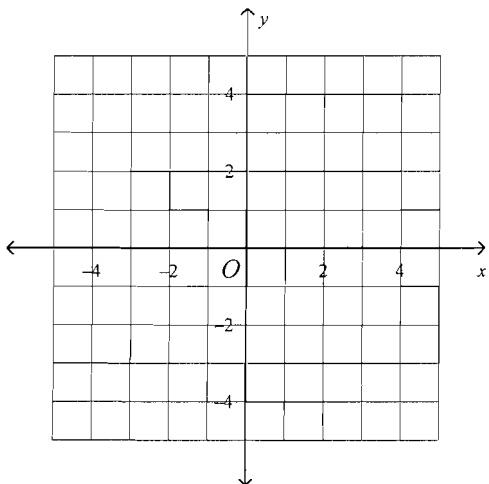
- _____ 8. $2x - 2y = -8$
 $x + 2y = -1$
 a. $(-14, 1)$ b. $(1, 5)$ c. $(-3, 1)$ d. $(0, 4)$

Solve the system of linear inequalities by graphing.

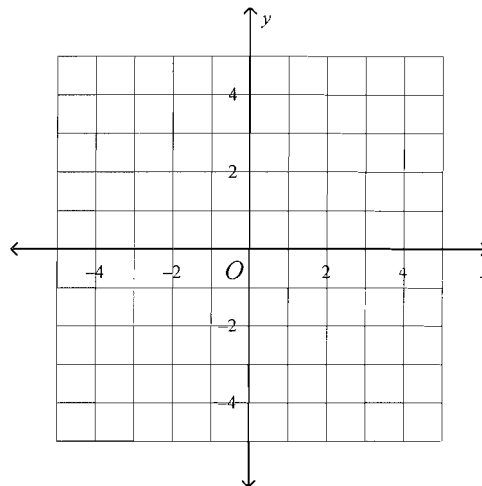
- _____ 9. $y \leq x + 4$
 $2x + y \leq -4$
 a.



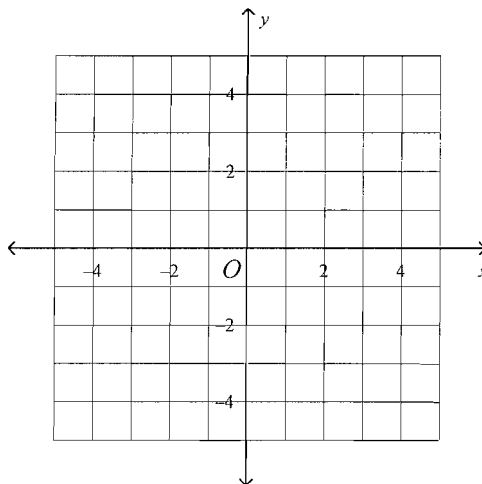
b.



c.



d.



- _____ 10. Order the group of quadratic functions from widest to narrowest graph.

$$y = -7x^2, y = -\frac{1}{5}x^2, y = -\frac{1}{3}x^2$$

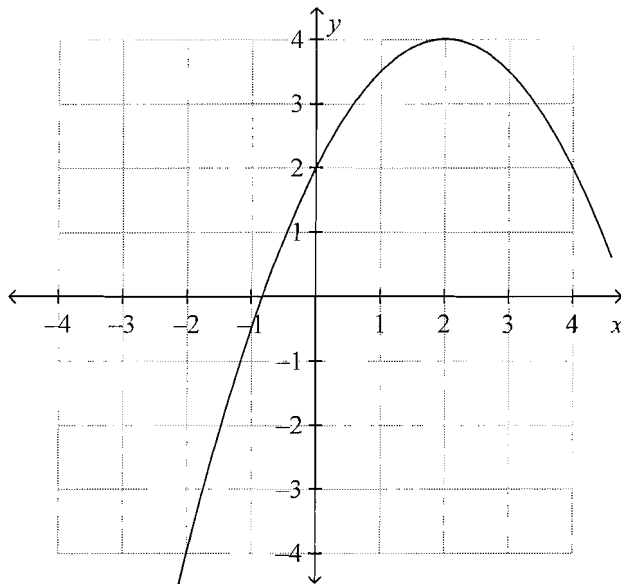
a. $y = -\frac{1}{3}x^2, y = -\frac{1}{5}x^2, y = -7x^2$

c. $y = -7x^2, y = -\frac{1}{3}x^2, y = -\frac{1}{5}x^2$

b. $y = -\frac{1}{5}x^2, y = -\frac{1}{3}x^2, y = -7x^2$

d. $y = -\frac{1}{5}x^2, y = -7x^2, y = -\frac{1}{3}x^2$

- _____ 11. Identify the vertex of the graph. Tell whether it is a minimum or maximum.



- a. (4, 2); minimum c. (2, 4); maximum
b. (2, 4); minimum d. (4, 2); maximum
- _____ 12. Which of the quadratic functions has the widest graph?
- a. $y = \frac{1}{3}x^2$ b. $y = -4x^2$ c. $y = 0.3x^2$ d. $y = -\frac{4}{5}x^2$
- _____ 13. A ball is thrown into the air with an upward velocity of 36 ft/s. Its height h in feet after t seconds is given by the function $h = -16t^2 + 36t + 5$.
- a. In how many seconds does the ball reach its maximum height? Round to the nearest hundredth if necessary.
b. What is the ball's maximum height?
- a. 1.13 s; 27.5 ft b. 1.13 s; 65.75 ft c. 1.13 s; 25.25 ft d. 2.25 s; 5 ft

Solve the equation using square roots.

- _____ 14. $x^2 + 20 = 4$
- a. $\sqrt{24}$ c. $\pm\sqrt{24}$
b. -4 d. no real number solutions

Use the quadratic formula to solve the equation. If necessary, round to the nearest hundredth.

- _____ 15. $y^2 + 7y = -11$
- a. $-4.76, -9.24$ b. $4.62, 2.38$ c. $-1, -6$ d. $-2.38, -4.62$

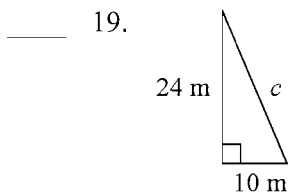
Use any method to solve the equation. If necessary, round to the nearest hundredth.

- _____ 16. $x^2 + 8x + 15 = 0$
a. $-6, -10$ b. $1, -1$ c. $-3, -5$ d. $3, 5$

Simplify the expression.

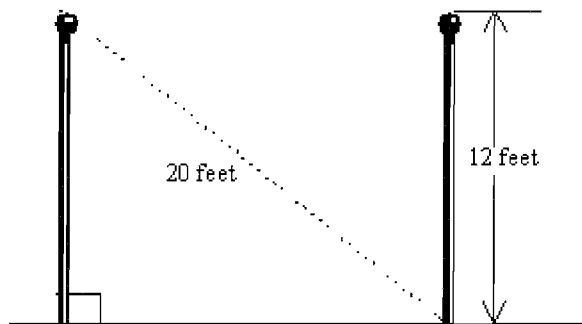
- _____ 17. $(-8.6)^0$
a. -1 b. 0 c. -8.6 d. 1
- _____ 18. $(4)^{-2}$
a. $-\frac{1}{16}$ b. 16 c. $\frac{1}{16}$ d. -8

In the given right triangle, find the missing length.



Not drawn to scale

- a. 28 m b. 26 m c. 25 m d. 27 m
- _____ 20. Two flag poles in front of the Court House are 12 ft tall. The distance from the top of one pole to the base of the other as shown in the diagram is 20 ft. What is the distance between the two flag poles?



- a. 16 ft b. 23 ft c. 18 ft d. 15 ft
- _____ 21. Which of the following could NOT be the lengths of the sides of a right triangle?
- a. 9 ft, 12 ft, 15 ft c. 4 cm, 7.5 cm, 8.5 cm
b. 5 in., 10 in., 15 in. d. 1.5 m, 2 m, 2.5 m

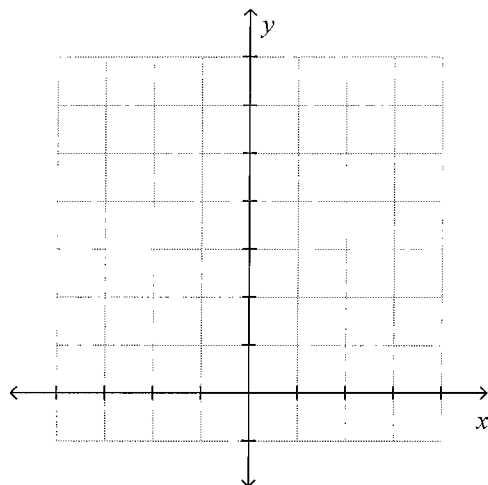
Name: _____

ID: A

Short Answer

22. Make a table of values and graph the quadratic function $y = -5x^2 + 4x - 1$.

x	y	(x, y)



23. Which kind of function best models the data? Linear or Exponential. Explain your reasoning.

x	y
0	30
1	6
2	1.2
3	0.24
4	0.048